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February 13, 2020

Ricky Vargas
Land and Redevelopment Program Branch
Land, Chemicals and Redevelopment Division
United States Environmental Protection Agency, Region 2
290 Broadway, 25th Floor
New York, New York 10007

**Re: ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey
SRP PI # 003621**

Dear Mr. Vargas:

Enclosed please find the In Situ and Ex Situ Stabilization (ISS/ESS) Long-Term Monitoring Report (LTMR). This LTMR presents the results of groundwater monitoring performed to evaluate lead concentrations in groundwater in area of concern (AOC) 50 South and AOC 50 North where ISS and ESS corrective measure implementations were completed and a performance monitoring program to evaluate lead concentrations in groundwater was required.

If you require additional information regarding this LTMR, please contact me at (732) 738-2023.

Sincerely,

Robert Mancini
Project Manager, Downstream

cc: Charlie Zielinski - NJDEP, Bureau of Case Management
Brendan Leehan, Buckeye Partners LLC

IN-SITU AND EX-SITU STABILIZATION LONG-TERM MONITORING REPORT

FORMER CHEVRON PERTH AMBOY FACILITY PERTH AMBOY, NEW JERSEY

Prepared for:



**Chevron Environmental Management Company
Perth Amboy, New Jersey**

Prepared by:



**200 Cottontail Lane
Somerset, New Jersey 08873**

FEBRUARY 2020

**Project No. 452038.37600
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LIST OF ACRONYMS

Acronym	Definition / Description
AOC	Area of concern
Chevron	Chevron Environmental Management Company
CM	Corrective measure
CMI	Corrective measures implementation
ESS	Ex-situ stabilization
Facility	Former Chevron Perth Amboy Facility
FSP-QAPP	Field Sampling and Analysis Plan and Quality Assurance Project Plan
GWQS	Groundwater quality standards
ISS	In-situ stabilization
IWP	Implementation work plan
LTMR	Long-Term Monitoring Report
NJDEP	New Jersey Department of Environmental Protection
NTU	Nephelometric turbidity unit
PDI	Pre-design investigation
SWMU	Solid waste management unit
TEL	Tetraethyl lead
USEPA	United States Environmental Protection Agency
Unit	Definition / Description
µg/L	Microgram(s) per liter

1.0 INTRODUCTION

Parsons has prepared this Long-Term Monitoring Report (LTMR) on behalf of Chevron Environmental Management Company (Chevron). The report presents the results of groundwater monitoring performed at the former Chevron Perth Amboy Facility (Facility) located in Perth Amboy, New Jersey (Figure 1). Groundwater monitoring was performed to evaluate lead concentrations in groundwater in solid waste management units (SWMUs) and areas of concern (AOCs) where in-situ stabilization (ISS) and ex-situ stabilization (ESS) corrective measures (CMs) have been implemented, and a performance monitoring program to evaluate lead concentrations in groundwater is required. In June 2018, an ISS/ESS LTMR was submitted to the United States Environmental Protection Agency (USEPA) and the New Jersey Department of Environmental Protection (NJDEP) which detailed the performance monitoring results for SWMUs 6, 8, 11A, 16, 20, 40, and 42, and AOC 33. The USEPA and NJDEP provided comments on the June 2018 ISS/ESS LTMR in a letter dated September 11, 2018, and Chevron provided a response to comments letter dated May 2, 2019. The USEPA and NJDEP approved continued groundwater monitoring for lead at SWMUs 8, 20, and 40 and the termination of groundwater monitoring for lead at AOC 33 and SWMUs 6, 11A, 16, and 42.

In May 2019, a second ISS/ESS LTMR was submitted to the USEPA and NJDEP which detailed the performance monitoring results for SWMUs 8, 20, and 40, and AOC 50 South. The USEPA and NJDEP approved no further performance groundwater monitoring for lead in SWMUs 8, 20, and 40 and continued groundwater monitoring in AOC 50 South.

This LTMR focuses on groundwater monitoring performed to evaluate lead concentrations in groundwater in AOC 50 South and AOC 50 North. The results of post-CM-implementation (CMI) monitoring events performed in AOC 50 South and North as proposed in the associated implementation work plans (IWPs) are provided in this LTMR. Changes in groundwater quality related to the completed ISS and/or ESS CMs and the need for continued monitoring are also evaluated. Where appropriate, a request for no further monitoring for lead in groundwater is presented. This LTMR is being submitted to the USEPA and the NJDEP for review and approval. Following this introduction, the ISS/ESS LTMR is organized as follows:

- Section 2 details the methodologies for groundwater sample collection, sample analysis, and data validation.
- Section 3 presents the performance monitoring groundwater sample results by area.
- Section 4 provides conclusions and recommendations based on the evaluation of the groundwater data.

2.0 GROUNDWATER SAMPLING METHODOLOGY

This section presents the methodologies followed for collection, analysis, and evaluation of groundwater samples.

2.1 Sample Collection

Detailed procedures for collection of groundwater samples are described in the Corrective Measures Implementation Field Sampling and Analysis Plan and Quality Assurance Project Plan (FSP-QAPP) (Chevron 2016). Facility-specific, low-flow groundwater sampling techniques described in CMI FSP-QAPP were used to obtain representative groundwater samples. The NJDEP Low-Flow Purge and Sample Technique was followed to minimize the impact of turbidity on total lead concentrations. Field parameter (pH, specific conductance, temperature, and turbidity) measurements were recorded and monitored for stabilization. Stabilization of field parameters is an indication that the water being purged from the well is representative of the aquifer, not stagnant water within the well casing. After field parameter stabilization, the pump discharge tubing was detached from the flow-through cell, and the sample containers were filled directly from the tubing. To ensure collection of a representative sample, the pump intake position remained constant throughout the sampling process, and the sampling flow rate did not exceed the purging flow rate. Field parameter logs for each sampling event are included in Appendix A.

2.2 Analytical Methods

Groundwater samples were collected in laboratory-provided bottles and placed on ice in a sample cooler. The sample identification number, date, time, requested analytical parameter, and project-related information were recorded on the bottle label and on the chain-of-custody form provided by Eurofins Lancaster Laboratory. Groundwater samples were analyzed by the laboratory for total lead and in some instances filtered lead using USEPA SW-846 Method 6020. Quality control samples were collected per the FSP-QAPP guidelines (Chevron 2016). Laboratory analytical data packages for each sampling event are included in electronic format (on CD) in Appendix B.

2.3 Data Validation

Analytical results were reviewed to determine the reliability of the data and to assess limitations on their use in support of project objectives. Sample results were reviewed and evaluated for compliance with holding times, surrogate recovery, internal standard results, and detection limits.

The data validation process involved the following:

- Review of the nonconformance summary included in each laboratory data package
- Evaluation of data quality using the Environmental Information Management Database – Data Validation Module

- Validation of analytical data in accordance with the USEPA Region 2 standard operating procedures for organic and inorganic data review and in accordance with the NJDEP Technical Guidance (2012)

Review of the nonconformance summaries included in the laboratory analytical data packages prepared by Eurofins Lancaster Laboratories indicated samples were received intact, sample holding times were met, and calibrations for each method were acceptable. The data validation performed by the Data Validation Module did not identify any data quality issues associated with the analytical results. The manual data validation performed by Parsons also did not identify any issues with data quality relating to precision, accuracy, representativeness, reproducibility, completeness, and sensitivity.

The submitted data are reliable and defensible based on the findings of the data validation performed on the laboratory analytical results for groundwater samples collected as part of the ISS/ESS performance monitoring program.

3.0 PERFORMANCE MONITORING RESULTS AND DISCUSSION

Performance groundwater monitoring was proposed to evaluate lead concentrations in SWMUs and AOCs where ISS/ESS CMIs were completed to remediate lead in soil and/or lead was identified in groundwater at concentrations above the CMI action level of 50 micrograms per liter ($\mu\text{g}/\text{L}$). Performance groundwater monitoring was performed in AOC 50 South and AOC 50 North. AOC 50 is in the southeastern corner of the Main Yard, north of the intersection of State Street and Maurer Road. AOC 50 is described as the bulk station and the area north of the bulk station to Woodbridge Creek. Pre-design investigations (PDIs) were performed as part of the CMI to define the extent of soil contamination in AOC 50. Due to limited access around the bulk station, AOC 50 was divided into a southern area (AOC 50 South) and a northern area (AOC 50 North) so the soil impacts in each area can be addressed independently and to limit the disruption to bulk station operations.

Figure 2 shows the AOC 50 North and South ESS locations and the groundwater elevation contours for second quarter 2019. Table 1 summarizes the construction of monitoring wells in the performance monitoring areas. The groundwater sampling results are discussed in the following sections.

3.1 AOC 50 South

AOC 50 South is bounded by an undeveloped gravel area designated as AOC 50 North and Woodbridge Creek to the north, State Street to the east, Maurer Road to the south, and a Conrail right-of-way to the west (Figure 3). The AOC 50 South CM IWP was submitted to the USEPA and NJDEP in April 2017 (Chevron 2017). ESS and capping were proposed in the approved AOC 50 South IWP. ESS was implemented in September 2017 to remediate lead- and tetraethyl lead (TEL)-impacted soil.

Chevron implemented a performance monitoring program to evaluate lead concentrations in AOC 50 South groundwater after implementation of the ESS CM. The performance monitoring program involved collection of groundwater samples from monitoring wells located upgradient and downgradient of AOC 50 South for total lead analysis. In accordance with the USEPA's approval letter for the AOC 50 South CM IWP, groundwater samples were collected quarterly from monitoring wells MW-0043, MW-134, MW-135, and A21TP1.

The groundwater sampling associated with the AOC 50 South performance monitoring program commenced in first quarter (February) 2018. Eight quarterly sampling events have been performed since February 2018 (Figure 3). Total lead was detected well below the CMI action level of 50 $\mu\text{g}/\text{L}$ during all sampling events. Lead was detected slightly above the NJDEP groundwater quality standard (GWQS) of 5 $\mu\text{g}/\text{L}$ in February 2019 in monitoring well MW-0043 and in May 2019 in monitoring well MW-134. Lead was detected below the NJDEP GWQS in all groundwater sample events before and after the February and May 2019 events.

Based on these sampling results, no further groundwater performance monitoring is warranted for lead in AOC 50 South.

3.2 AOC 50 North

AOC 50 North is bounded by Woodbridge Creek to the north, the Facility property boundary and State Street to the east, by the AOC 50 South bulk station to the south, and a Conrail right-of-way to the west (Figure 4). The AOC 50 North CM IWP was submitted to the USEPA and NJDEP in November 2018 (Chevron 2018). ESS was proposed in the AOC 50 North CM IWP to address lead-impacted soil. ESS was implemented from December 2018 through February 2019.

A performance monitoring program was not initially proposed for AOC 50 North because lead was not detected at concentrations above the CMI action level in groundwater samples collected from monitoring wells surrounding AOC 50 North. Further, the ESS CM removed the lead-impacted soil that could potentially be a source of lead impacts in groundwater. USEPA and NJDEP commented on the AOC 50 North CM IWP in a letter dated April 5, 2019, requesting the installation of additional wells to further evaluate groundwater post remediation. In response to the USEPA and NJDEP comments, Chevron installed six monitoring wells in the AOC 50 North area and proposed quarterly sampling for a period of two years to evaluate changes in lead concentrations in groundwater resulting from the ESS CMI in AOC 50 North.

Chevron implemented a quarterly performance monitoring program to evaluate groundwater quality in AOC 50 North after implementation of the ESS CM. The performance monitoring program involves collection of groundwater samples from monitoring wells MW-0035, MW-158, MW-552, MW-562, and MW-579 through MW-582 for lead analysis. Groundwater sampling commenced at monitoring wells MW-0035, MW-158, MW-552, and MW-562 in third quarter 2019 (August). Monitoring wells MW-579 through MW-582 were installed in September 2019, and groundwater samples were collected in November 2019 from the four existing and four newly installed AOC 50 North monitoring wells.

Analytical results show that lead was not detected above the CMI action level or the NJDEP GWQS in groundwater samples collected from monitoring wells MW-158, MW-552, MW-562, and MW-579 through MW-582. Lead was detected above the CMI action level during the August 2019 sampling in monitoring well MW-0035 and below the CMI action level and the NJDEP GWQS in November 2019. The field parameters log for the August 2019 sampling event indicates that the sample was turbid (257.1 nephelometric turbidity units [NTUs]). The elevated lead concentrations detected during the August 2019 sampling event are not considered to be representative of aquifer conditions, since high turbidity levels in groundwater samples typically result in elevated metals concentrations. The subsequent sampling event conducted at MW-0035 in November 2019 shows a marked decrease in turbidity levels (7.7 NTUs) and corresponding lead concentrations in groundwater, confirming the elevated concentrations of lead detected during the August 2019 groundwater sampling event were related to turbidity in the sample and are not representative of lead concentrations in MW-0035 groundwater. Sampling results are summarized on Table 2. The monitoring well locations and analytical results are shown on Figure 4.

Quarterly groundwater sampling as part of the AOC 50 North performance monitoring program will continue to evaluate the lead concentrations in groundwater through third quarter 2021. Based on the results of the groundwater monitoring, a determination will be made regarding the need for continued groundwater monitoring. If lead concentrations remain below the CMI action level, no further monitoring for lead in groundwater will be recommended.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Groundwater sampling was conducted in AOC 50 South and AOC 50 North in accordance with the performance monitoring plan proposed for each area. The performance monitoring program included collection of groundwater samples from select monitoring wells in each designated AOC for lead analysis. The purpose of the performance monitoring is to evaluate changes in lead concentrations in groundwater resulting from the implementation of ESS CMs and to demonstrate lead concentrations in groundwater remain below the established CMI action level.

The results of the performance monitoring program implemented in AOC 50 South demonstrate that lead is not present in groundwater at concentrations above the CMI action level. Since the remedial action objectives for lead concentrations in groundwater in AOC 50 South have been achieved, Chevron requests USEPA and NJDEP approve the recommendation for no further performance monitoring associated with lead in groundwater in AOC 50 South.

Performance monitoring will continue in AOC 50 North, and lead concentrations will continue to be evaluated. Upon completion of the proposed two-year performance monitoring program in AOC 50 North, a recommendation will be made for either no further monitoring for lead in groundwater or additional groundwater sampling, dependent on whether lead is detected at concentrations above the CMI action level.

5.0 REFERENCES

- Chevron. 2016. Perth Amboy Facility Corrective Measures Implementation Sampling and Analysis Plan/Quality Assurance Project Plan (FSAP-QAPP). March.
- Chevron. 2017. Corrective Measures Implementation Work Plan AOC 50 South. April.
- Chevron. 2018. Corrective Measures Implementation Work Plan AOC 50 North November.
- NJDEP. 2012. Technical Requirements for Site Remediation. NJAC 7:26E. May 7.

TABLES

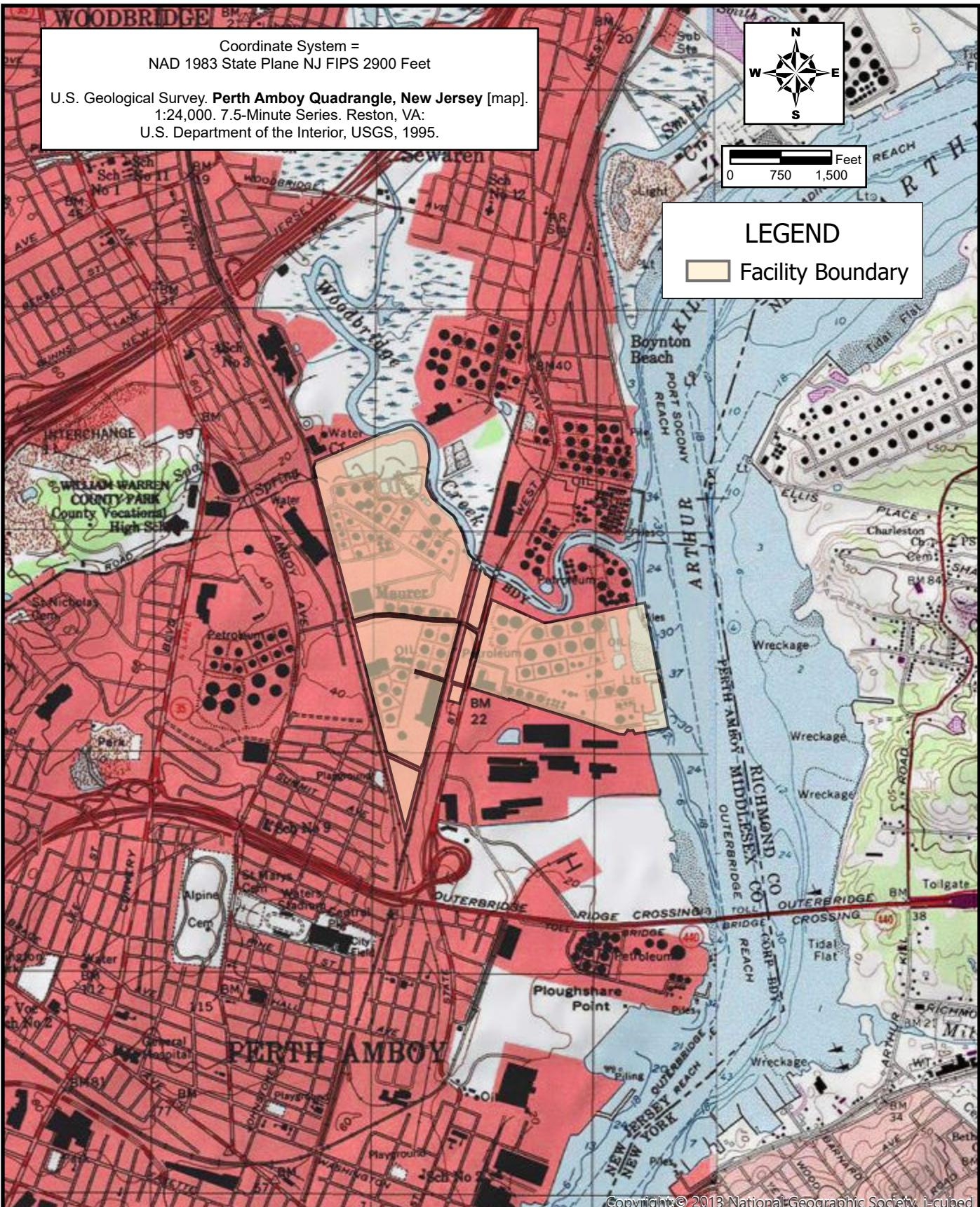
Table 1
 Monitoring Well Construction Summary
 ISS-ESS Long-Term Monitoring Report
 Former Chevron Perth Amboy Facility
 Perth Amboy New Jersey

Location ID	Well Completion Date	Total Depth of Well (ft bgs)	Casing Diameter (inches)	Casing Material	Screen Start Depth (ft. bgs)	Screen End Depth (ft. bgs)	Screen Length (ft.)	Top of Inner Casing Elev. (ft. NGVD 29)	Ground Elevation (ft. NGVD 29)	NJDEP Well Permit No.	Difference Between Ground Surface and TOC (ft.)	Depth to Top of Screen from TOC (ft.)	Total Depth of Well (ft. below TOC)
MW-0035	3/19/1997	5	4.00	Sch 40 PVC	1	5	4	7.84	5.90	26-46952	1.94	2.94	6.94
MW-0043	2/6/1998	12	4.00	Sch 40 PVC	2	12	10	11.04	8.50	26-49829	2.54	4.54	14.54
MW-134	8/16/2002	11.5	4.00	Sch 40 PVC	1.5	11.5	10	14.55	11.50	26-65087	3.05	4.55	14.55
MW-135	8/16/2002	13	4.00	Sch 40 PVC	3	13	10	10.94	8.70	26-65088	2.24	5.24	15.24
MW-158	11/4/2002	11.5	4.00	Sch 40 PVC	1.5	11.5	10	7.96	5.10	26-65920	2.86	4.36	14.36
MW-552	7/10/2019	16	2.00	Sch 40 PVC	1	16	15	9.28	6.50	E201905920	2.78	3.78	18.78
MW-562	7/9/2019	16	2.00	Sch 40 PVC	1	16	15	9.04	5.70	E201905921	3.34	4.34	19.34
MW-579	9/12/2019	16	2.00	Sch 40 PVC	1	16	15	6.61	6.80	E201908964	-0.19	0.81	15.81
MW-580	9/11/2019	16	2.00	Sch 40 PVC	1	16	15	7.57	5.00	E201908965	2.57	3.57	18.57
MW-581	9/11/2019	16	2.00	Sch 40 PVC	1	16	15	6.37	6.60	E201908966	-0.23	0.77	15.77
MW-582	9/12/2019	16	2.00	Sch 40 PVC	1	16	15	7.56	7.80	E201908967	-0.24	0.76	15.76
A21TP1	9/30/2002	12	2.00	Sch 40 PVC	2	12	10	16.53	13.40	26-65789	3.13	5.13	15.13

Table 2
 Long-Term Monitoring Groundwater Sample Results
 ISS/ESS Long-Term Monitoring Report
 Former Chevron Perth Amboy Facility
 Perth Amboy, New Jersey

Monitoring Well	Sample Date	Field Sample ID	Lead Result ($\mu\text{g/L}$)	Filtered	Depth to Water (ft. below TOC)	Pump Intake Depth (ft. below TOC)	Screen Interval (ft. below TOC)
AOC 50 South							
MW-0043	02/21/2018	M043D9	0.11U	N	6.91	11	4.54 - 14.54
	05/09/2018	M043E1	3.0	N	7.18	10.5	4.54 - 14.54
	08/01/2018	M043E2	2.9J	N	6.74	11	4.54 - 14.54
	11/27/2018	M043E3	1.5J	N	6.61	10.58	4.54 - 14.54
	02/22/2019	M043E4	5.3	N	7.31	9.62	4.54 - 14.54
	05/13/2019	M043E5	4.2J	N	7.03	10.79	4.54 - 14.54
	08/20/2019	M043E6	4.1	N	7.34	11	4.54 - 14.54
	11/07/2019	M043E7	1.5	N	7.15	10.85	4.54 - 14.54
MW-134	02/22/2018	M134C2	1.9	N	5.79	10	4.55 - 14.55
	05/14/2018	M134C3	2.4	N	6.64	10.5	4.55 - 14.55
	08/01/2018	M134C4	1.1U	N	5.84	10	4.55 - 14.55
	11/20/2018	M134C5	1.1U	N	5.75	10.15	4.55 - 14.55
	02/28/2019	M134C6	1.2J	N	6.08	9.55	4.55 - 14.55
	05/16/2019	M134C7	6.5	N	5.54	10.05	4.55 - 14.55
	08/14/2019	M134C8	1.4J	N	6.35	10.5	4.55 - 14.55
	11/08/2019	M134C9	0.58	N	6.50	10.53	4.55 - 14.55
MW-135	02/22/2018	M135C2	0.15J	N	3.76	11	5.24 - 15.24
	05/14/2018	M135C3	0.27J	N	3.97	10.25	5.24 - 15.24
	08/01/2018	M135C4	1.1U	N	3.53	10.5	5.24 - 15.24
	11/21/2018	M135C5	1.1U	N	3.49	10.24	5.24 - 15.24
	02/28/2019	M135C6	1.1U	N	3.82	10.24	5.24 - 15.24
	05/16/2019	M135C7	1.1U	N	3.60	10.24	5.24 - 15.24
	08/15/2019	M135C8	1.1U K4	N	4.12	10.25	5.24 - 15.24
	11/12/2019	M135C9	1.1	N	3.83	10.24	5.24 - 15.24
A21TP1	02/22/2018	A21TP1S	0.67J	N	6.35	10.5	5.13 - 15.13
	05/10/2018	A21TP1T	0.2J	N	7.53	11	5.13 - 15.13
	08/02/2018	A21TP1U	1.1U	N	4.40	12.5	5.13 - 15.13
	11/28/2018	A21TP1V	2.9J	N	5.98	11	5.13 - 15.13
	02/13/2019	A21TP1W	1.2J	N	6.16	10.7	5.13 - 15.13
	05/23/2019	A21TP1X	1.1U	N	6.88	11	5.13 - 15.13
	08/29/2019	A21TP1Y	1.2J	N	7.94	11.97	5.13 - 15.13
	11/4/2019	A21TP1Z	0.56	N	7.42	9.5	5.13 - 15.13
AOC 50 North							
MW-0035	08/21/2019	M035D8	115	N	5.12	6	2.94 - 6.94
	08/21/2019	M035D8	1.1U	Y	5.12	6	2.94 - 6.94
	11/08/2019	M035D9	4.3	N	3.27	5.11	2.94 - 6.94
	11/08/2019	M035D9	0.2J	Y	3.27	5.11	2.94 - 6.94
MW-158	08/22/2019	M158D7	1.2J	N	4.19	9.5	4.36 - 14.36
	08/22/2019	M158D7	1.1U	Y	4.19	9.5	4.36 - 14.36
	11/12/2019	M158D9	0.11 J	N	3.75	9.36	4.36 - 14.36
MW-552	08/21/2019	M552A2	2.9J	N	4.86	10.5	3.78 - 18.78
	08/21/2019	M552A2	1.1U	Y	4.86	10.5	3.78 - 18.78
	11/12/2019	M552A3	1.1	N	5.26	10.5	3.78 - 18.78
	11/12/2019	M552A3	0.16J	Y	5.26	10.5	3.78 - 18.78
MW-562	08/22/2019	M562A2	1.1U	N	5.38	10.5	4.34 - 19.34
	08/22/2019	M562A2	1.1U	Y	5.38	10.5	4.34 - 19.34
	11/7/2019	M562A3	0.51	N	5.28	10.64	4.34 - 19.34
	11/7/2019	M562A3	0.071U	Y	5.28	10.64	4.34 - 19.34
MW-579	11/12/2019	M579A1	3.8	N	1.5	9	0.81 - 15.81
	11/12/2019	M579A1	0.39J	Y	1.5	9	0.81 - 15.81
MW-580	11/12/2019	M580A1	0.58	N	2.76	11.5	3.57 - 18.57
	11/12/2019	M580A1	0.15J	Y	2.76	11.5	3.57 - 18.57
MW-581	11/08/2019	M581A1	0.34J	N	1.1	8.55	0.77 - 15.77
	11/08/2019	M581A1	0.071U	Y	1.1	8.55	0.77 - 15.77
MW-582	11/12/2019	M582A1	0.15J	N	0.5	8	0.76 - 15.76
	11/12/2019	M582A1	0.071U	Y	0.5	8	0.76 - 15.76

FIGURES



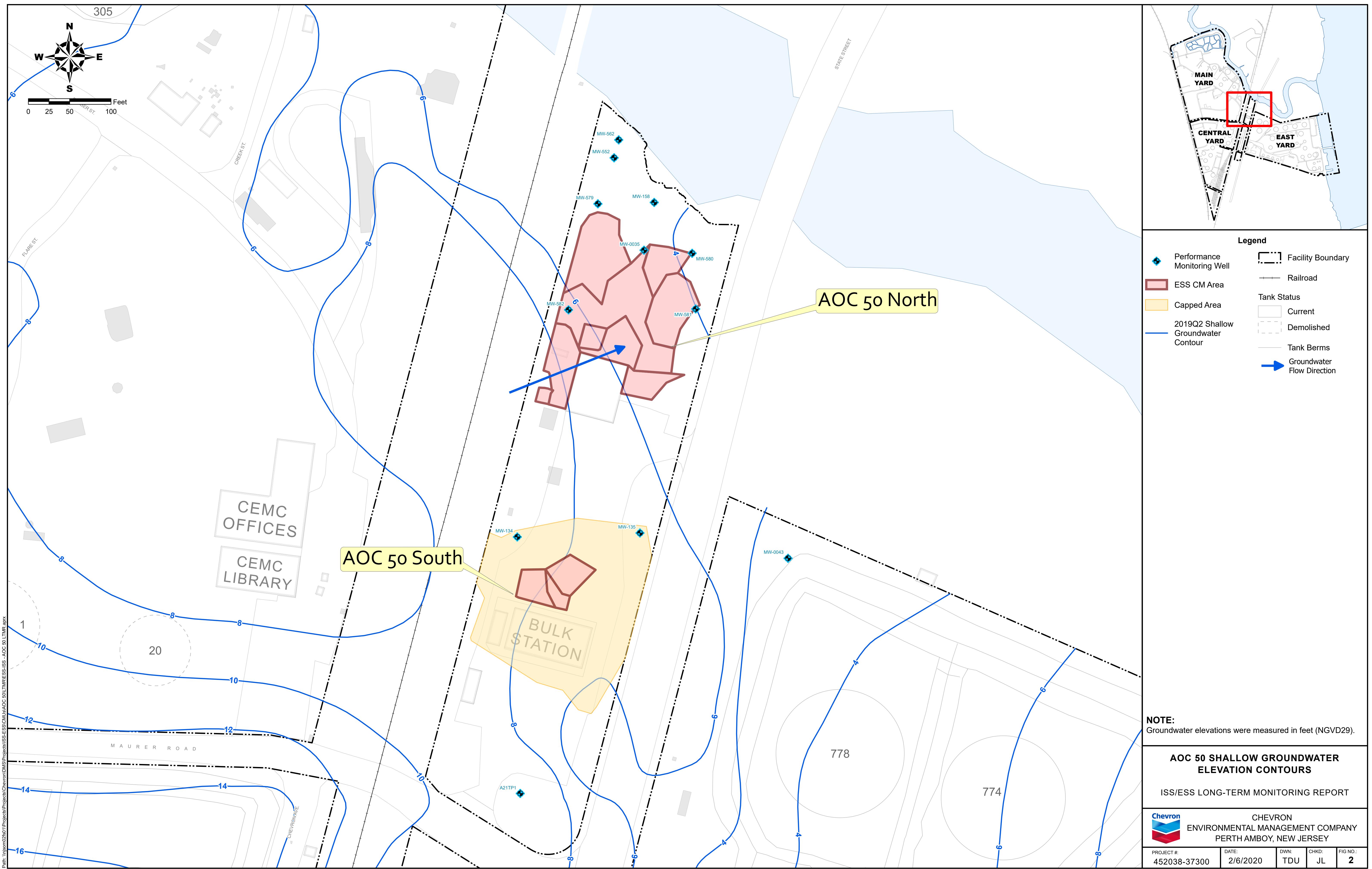
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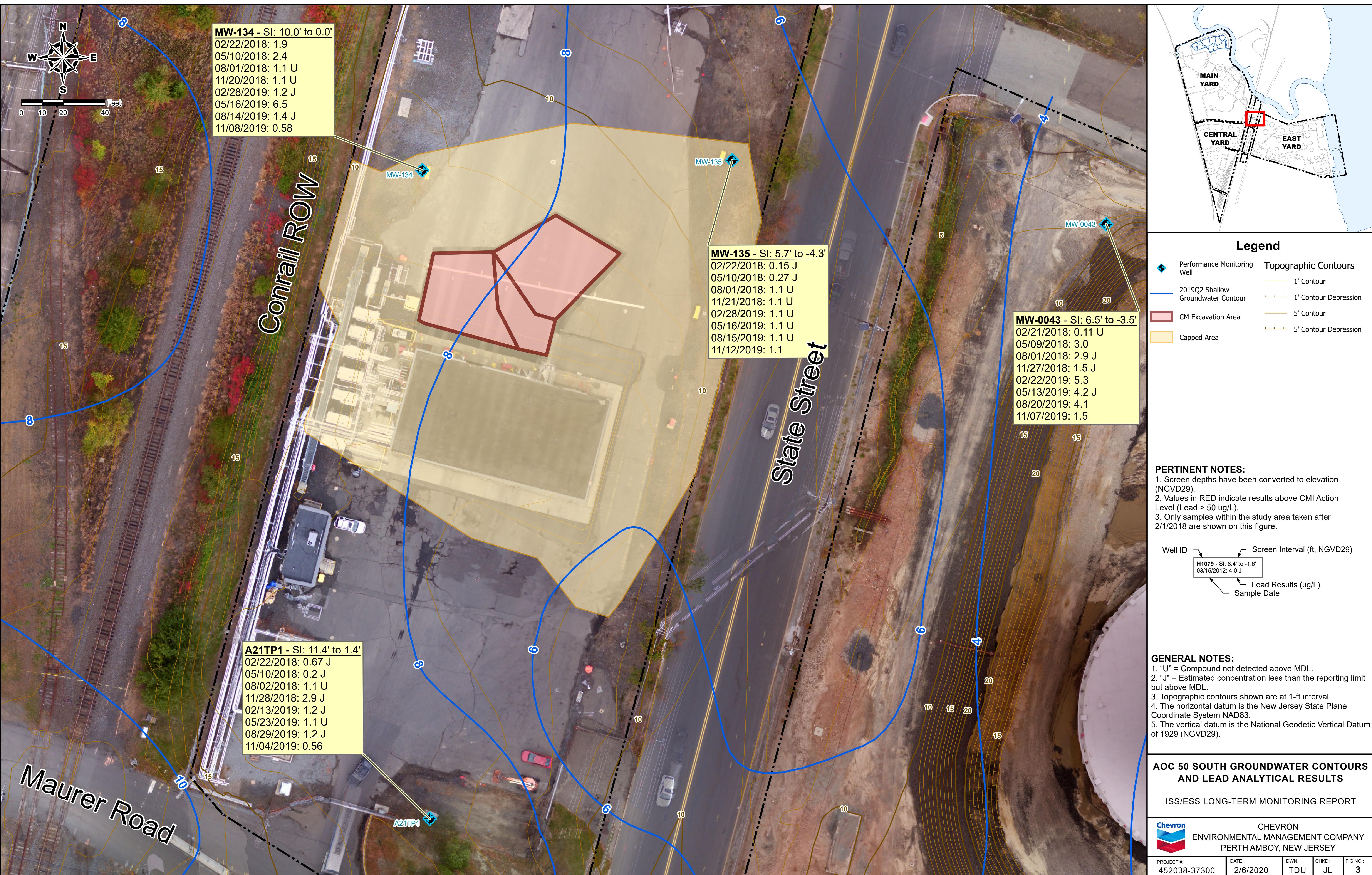


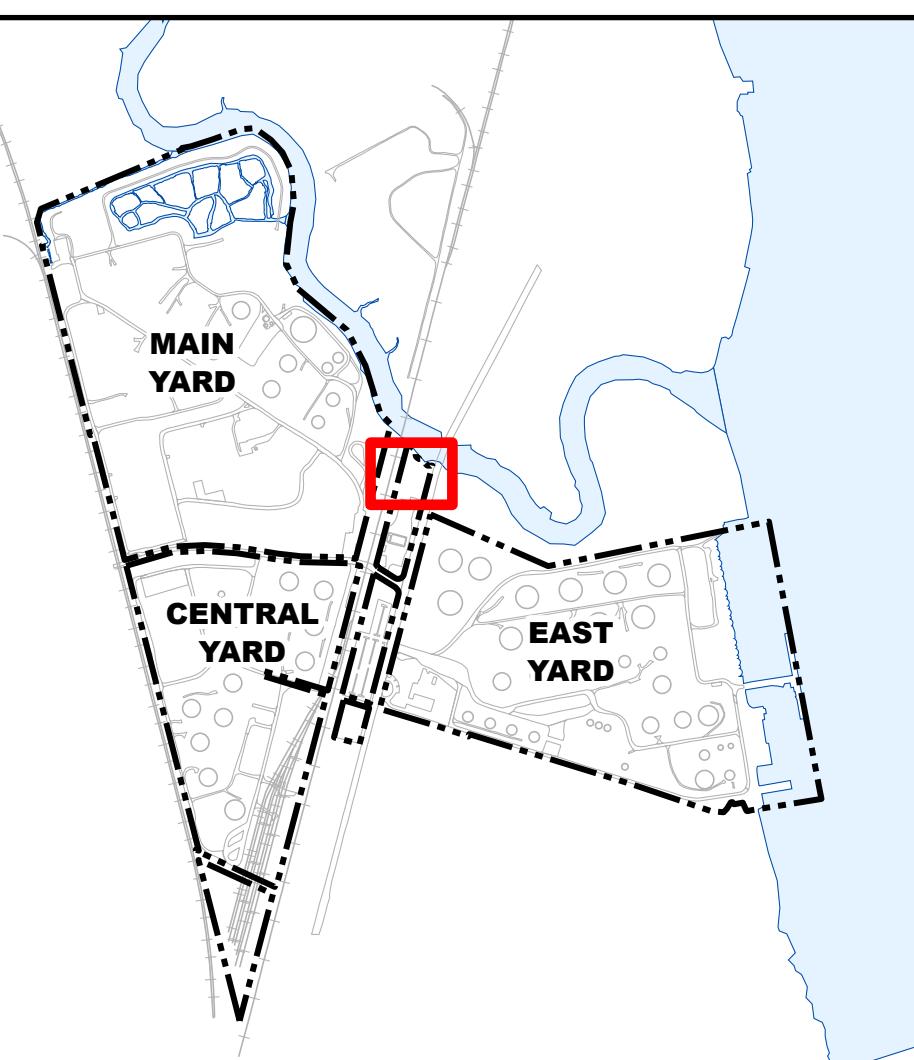
SITE LOCATION ON A USGS MAP

ISS/ESS LONG-TERM MONITORING REPORT

DATE:	1/17/2020	DWN:	TDU
PROJECT #:	452038-37300	CHKD:	JL
		FIG #:	1







Legend

Performance Monitoring Well	Topographic Contours
2019Q2 Shallow Groundwater Contour	1' Contour
	1' Contour Depression
ESS CM Area	5' Contour
	Facility Boundary

PERTINENT NOTES:

1. Screen depths have been converted to elevation (NGVD29).
2. Values in RED indicate results above CMI Action Level (Lead > 50 ug/L).
3. Only samples within the study area taken after 8/1/2019 are shown on this figure.

Well ID → Screen Interval (ft, NGVD29)
H1079 - SI: 8.4' to -1.6'
03/15/2012: 4.0 J
→ Lead Results (ug/L)
→ Sample Date

GENERAL NOTES:

1. "FD" = Field duplicate sample.
2. "U" = Compound not detected above MDL.
3. "J" = Estimated concentration less than the reporting limit but above MDL.
4. Aerial photograph dated October 2017 was provided by Parsons.
5. Topographic contours shown are at 1-ft interval.
6. The horizontal datum is the New Jersey State Plane Coordinate System NAD83.
7. The vertical datum is the National Geodetic Vertical Datum of 1929 (NGVD29).

AOC 50 NORTH GROUNDWATER CONTOURS AND LEAD ANALYTICAL RESULTS

ISS/ESS LONG-TERM MONITORING REPORT

Chevron ENVIRONMENTAL MANAGEMENT COMPANY
PERTH AMBOY, NEW JERSEY

PROJECT #: 452038-37300 DATE: 2/5/2020 DWN: TDU CHKD: JL FIG NO.: 4

APPENDIX A

Low-Flow Sampling Data

Appendix A-1
 MW-0043 Low Flow Sampling Data
 ISS/ESS Long-Term Monitoring Report
 Former Chevron Perth Amboy Facility
 Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M043D9	2/21/2018	9:30 AM	13.92	33.6	273.0	6.73	4.64	1.540	0.08	6.91
		9:32 AM	12.73	147.7	266.0	6.74	3.71	1.853	0.09	--
		9:35 AM	12.66	54.2	259.0	6.74	3.38	2.144	0.11	--
		9:37 AM	12.82	31.0	165.0	6.75	3.43	2.220	0.11	--
		9:40 AM	12.66	35.2	98.0	6.76	3.66	2.313	0.12	--
		9:42 AM	12.75	40.6	84.0	6.77	3.68	2.352	0.12	--
		9:44 AM	12.79	67.6	79.0	6.77	3.66	2.398	0.12	--
		9:47 AM	13.07	52.9	71.0	6.78	3.57	2.412	0.12	--
		9:49 AM	12.73	62.0	62.0	6.78	3.59	2.489	0.13	--
		9:52 AM	12.94	30.4	58.0	6.78	3.60	2.497	0.13	--
		9:54 AM	12.91	55.0	55.0	6.79	3.50	2.518	0.13	--
		9:56 AM	13.15	57.8	52.0	6.79	3.49	2.525	0.13	--
		9:59 AM	13.16	27.8	53.0	6.79	3.50	2.539	0.13	--
		10:01 AM	13.33	36.3	53.0	6.80	3.48	2.542	0.13	--
		10:04 AM	13.34	35.0	49.0	6.80	3.44	2.567	0.13	--
		10:06 AM	13.20	52.9	48.0	6.80	3.45	2.605	0.14	7.25
		10:08 AM	13.16	37.5	45.0	6.80	3.41	2.639	0.14	--
		10:11 AM	13.29	29.6	42.0	6.80	3.40	2.649	0.14	--
		10:13 AM	13.25	36.7	41.0	6.80	3.38	2.671	0.14	--
		10:16 AM	13.03	27.5	39.0	6.81	3.36	2.715	0.14	--
		10:18 AM	13.24	27.0	32.0	6.81	3.30	2.717	0.14	--
M043E1	5/9/2018	12:31 PM	19.89	29.6	12.0	6.90	4.77	1.671	0.09	7.18
		12:34 PM	16.17	17.8	-34.0	6.69	2.99	1.725	0.09	--
		12:37 PM	15.98	28.2	-49.0	6.64	2.86	1.850	0.09	--
		12:40 PM	15.79	33.3	-57.0	6.64	2.82	1.876	0.10	--
		12:42 PM	15.43	32.9	-63.0	6.64	2.80	1.921	0.10	--
		12:45 PM	15.25	39.9	-66.0	6.63	2.73	1.964	0.10	--
		12:48 PM	15.38	43.2	-69.0	6.63	2.64	2.000	0.10	--
		12:50 PM	15.33	34.7	-71.0	6.63	2.59	2.035	0.10	--
		12:53 PM	15.49	54.0	-72.0	6.63	2.54	2.063	0.11	--
		12:56 PM	15.46	50.2	-73.0	6.63	2.52	2.088	0.11	--
		12:59 PM	15.56	48.2	-75.0	6.64	2.50	2.095	0.11	--
		1:01 PM	15.67	36.1	-76.0	6.64	2.47	2.118	0.11	--
		1:04 PM	15.65	41.2	-77.0	6.64	2.44	2.139	0.11	--
		1:07 PM	16.03	46.8	-77.0	6.64	2.37	2.143	0.11	--
		1:10 PM	15.72	38.5	-78.0	6.65	2.36	2.188	0.11	--
		1:12 PM	15.68	46.1	-79.0	6.66	2.34	2.194	0.11	--
		1:15 PM	15.52	46.0	-81.0	6.67	2.29	2.220	0.11	--
		1:18 PM	15.16	38.9	-84.0	6.67	2.26	2.224	0.11	--
		1:21 PM	15.19	46.9	-84.0	6.67	2.24	2.245	0.12	7.26
M043E2	8/1/2018	10:08 AM	24.51	39.2	-35.0	7.85	4.31	1.374	0.07	6.83
		10:10 AM	23.15	36.0	-84.0	7.28	1.27	1.378	0.07	--
		10:13 AM	23.62	58.2	-96.0	6.97	1.10	1.587	0.08	--
		10:15 AM	23.68	60.9	-108.0	6.87	1.07	1.531	0.08	--
		10:18 AM	23.72	62.0	-116.0	6.81	1.08	1.424	0.07	--
		10:20 AM	23.80	54.2	-122.0	6.76	1.13	1.432	0.07	--
		10:23 AM	23.75	61.2	-125.0	6.69	1.14	1.456	0.07	--
		10:25 AM	23.72	57.3	-129.0	6.68	1.13	1.478	0.08	6.90

Appendix A-1
 MW-0043 Low Flow Sampling Data
 ISS/ESS Long-Term Monitoring Report
 Former Chevron Perth Amboy Facility
 Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M043E3	11/27/2018	9:30 AM	13.08	50.3	154.1	6.74	1.53	1.830	0.95	6.61
		9:35 AM	13.25	79.3	158.6	6.66	0.70	2.033	1.04	6.69
		9:40 AM	13.33	72.0	154.1	6.72	0.54	1.993	1.02	6.74
		9:45 AM	13.48	70.9	151.1	6.74	0.75	2.034	1.05	6.81
		9:50 AM	13.43	75.9	144.3	6.82	0.72	2.143	1.10	6.87
		9:55 AM	13.83	45.3	141.0	6.76	0.40	2.205	1.14	6.93
		10:00 AM	13.91	36.2	137.5	6.74	0.34	2.323	1.20	7.02
		10:05 AM	13.94	35.6	137.0	6.73	0.34	2.335	1.21	7.08
		10:10 AM	13.84	30.4	134.5	6.72	0.33	2.418	1.25	7.14
		10:25 AM	8.55	49.5	16.7	7.32	16.44	0.625	0.31	7.31
M043E4	2/22/2019	10:30 AM	8.59	11.9	27.5	7.3	13.3	0.599	0.31	7.4
		10:35 AM	8.52	41.4	32.7	7.27	12.78	0.603	0.29	7.38
		10:40 AM	8.51	35.1	36.6	7.28	12.53	0.625	0.31	7.43
		10:45 AM	8.57	29.2	38.7	7.24	12.19	0.654	0.32	7.45
		10:50 AM	8.58	28.4	40.9	7.19	12.17	0.655	0.33	7.44
		10:55 AM	8.59	28.2	42.7	7.17	12.16	0.656	0.38	7.45
M043E5	5/13/2019	1:00 PM	10.48	36.1	-55.6	6.68	2.71	2.719	1.42	7.03
		1:05 PM	10.47	27.2	-67.5	6.64	1.36	2.724	1.42	7.32
		1:10 PM	10.45	23	-74.4	6.64	0.89	2.689	1.4	7.61
		1:15 PM	10.44	20	-78.8	6.64	0.62	2.699	1.41	7.82
		1:20 PM	10.49	18.3	-82	6.64	0.5	2.695	1.4	7.89
		1:25 PM	10.47	16.7	-83.4	6.63	0.48	2.694	1.4	7.92
		1:30 PM	10.47	17.1	-84.3	6.63	0.47	2.693	1.4	7.99
M043E6	8/21/2019	8:15 AM	21.8	225.4	-118.4	6.7	0.97	2.678	1.39	7.34
		8:20 AM	22.28	159.9	-119.2	6.7	0.73	2.647	1.37	7.4
		8:25 AM	22.91	113.1	-112.8	6.71	0.68	2.589	1.34	7.4
		8:30 AM	23.28	66.3	-105.4	6.72	0.64	2.572	1.33	7.4
		8:35 AM	22.26	22.3	-109.7	6.73	0.59	2.517	1.3	7.45
		8:40 AM	21.38	13.9	-115.6	6.71	0.39	2.569	1.33	7.45
		8:45 AM	21.52	13.4	-118.7	6.71	0.32	2.620	1.36	7.45
		8:50 AM	21.64	14.8	-119.3	6.71	0.33	2.721	1.41	7.45
		8:55 AM	21.71	14.8	-119.4	6.7	0.23	2.798	1.46	7.45
		9:00 AM	21.64	16.2	-119.9	6.7	0.3	2.845	1.48	7.45
M043E7	11/7/2019	8:50 AM	14.78	27.9	-75.7	6.67	8.02	0.772	0.38	7.2
		8:55 AM	15.37	13.1	-161.8	6.7	3.46	0.734	0.36	7.2
		9:00 AM	16.26	21.8	-169.9	6.74	1.63	0.737	0.36	7.26
		9:05 AM	16.41	14.9	-164	6.74	1.48	0.758	0.37	7.24
		9:10 AM	16.6	14.7	-181.4	6.74	1.23	0.777	0.38	7.23
		9:15 AM	16.5	23	-158.7	6.73	1.18	0.791	0.39	7.23
		9:20 AM	16.75	23.8	-148.2	6.74	1.12	0.805	0.4	7.24
		9:25 AM	16.71	14.7	-165.8	6.73	1.12	0.819	0.4	7.26
		9:30 AM	16.52	14.6	-158	6.74	1.06	0.830	0.41	7.25
		9:35 AM	16.52	13.2	-149.8	6.73	1.04	0.837	0.41	7.24

Appendix A-2
MW-134 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M134C2	2/22/2018	10:53 AM	8.13	56.4	-77	6.53	5.08	0.1285	0.01	5.9
		10:55 AM	8.25	21.3	-63	6.4	1.13	0.5664	0.01	--
		10:58 AM	8.27	17.3	-48	6.41	0.65	0.9862	0.02	--
		11:00 AM	8.35	14	-41	6.41	0.59	1.0864	0.02	--
		11:03 AM	8.33	14.5	-37	6.41	0.55	1.1655	0.02	--
		11:05 AM	8.31	15.4	-34	6.42	0.67	0.9582	0.02	--
		11:07 AM	8.36	15.5	-31	6.42	0.67	0.9582	0.02	--
		11:10 AM	8.36	17	-30	6.43	0.71	0.9056	0.02	6.33
M134C3	5/10/2018	10:18 AM	16.27	28.5	-160.0	6.91	6.28	0.5320	0.03	6.64
		10:20 AM	15.01	15.2	-145.0	6.66	1.59	0.4901	0.02	--
		10:23 AM	15.13	11.1	-141.0	6.62	1.21	0.4897	0.02	--
		10:25 AM	15.13	16.7	-143.0	6.61	1.06	0.4889	0.02	--
		10:27 AM	15.11	12.8	-145.0	6.61	0.99	0.4862	0.02	--
		10:30 AM	15.14	11.4	-147.0	6.62	0.97	0.4839	0.02	--
		10:32 AM	15.25	12.0	-148.0	6.62	0.96	0.4817	0.02	--
		10:35 AM	15.28	12.0	-150.0	6.63	0.94	0.4837	0.02	6.89
M134C4	8/1/2018	12:32 PM	31.28	20.1	-82.0	7.95	3.28	0.3470	0.02	5.91
		12:35 PM	28.51	9.9	-125.0	7.42	1.11	0.3210	0.02	--
		12:38 PM	28.37	9.3	-127.0	7.16	0.80	0.3190	0.02	--
		12:40 PM	28.49	9.0	-127.0	7.00	0.70	0.3190	0.02	--
		12:43 PM	28.35	8.3	-125.0	6.87	0.64	0.3180	0.02	--
		12:46 PM	28.19	8.4	-124.0	6.77	0.59	0.3170	0.02	--
		12:48 PM	28.14	7.4	-123.0	6.69	0.57	0.3180	0.02	--
		12:50 PM	27.94	8.0	-123.0	6.64	0.53	0.3180	0.02	--
M134C5	11/20/2018	12:53 PM	27.99	8.3	-123.0	6.59	0.52	0.3180	0.02	6.2
		1:55 PM	14.54	82.9	-26.7	7.76	0.86	0.2240	0.11	5.84
		2:00 PM	14.57	76.5	-10.9	7.48	0.54	0.2210	0.11	5.98
		2:05 PM	14.51	64.7	15.8	6.99	0.37	0.2190	0.10	6.13
		2:10 PM	14.60	61.8	18.3	6.85	0.30	0.2190	0.10	6.31
		2:15 PM	14.47	64.7	13.3	6.79	0.34	0.2180	0.10	6.54
		2:20 PM	14.46	57.9	12.0	6.78	0.31	0.2190	0.10	6.63
		2:25 PM	14.76	50.7	4.7	6.78	0.23	0.2190	0.10	6.71
		2:30 PM	14.79	51.6	0.4	6.75	0.22	0.2190	0.10	6.93
		2:35 PM	14.81	47.6	-0.4	6.75	0.21	0.2190	0.10	6.92

Appendix A-2
MW-134 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M134C6	2/28/2019	12:45 PM	8.27	50.1	-12.9	8.64	4.03	0.293	0.13	6.42
		12:50 PM	8.06	84.1	-21.3	8.16	2.93	0.199	0.09	6.68
		12:55 PM	7.86	37.1	-10.3	7.84	3.02	0.199	0.09	6.89
		1:00 PM	7.76	15.7	-2.6	7.55	2.85	0.2	0.1	6.97
		1:05 PM	7.84	8	-0.3	7.48	2.59	0.2	0.1	7.05
		1:10 PM	7.9	7.3	0.9	7.44	2.28	0.201	0.1	7.13
		1:15 PM	7.9	6.8	-0.8	7.45	1.98	0.203	0.1	7.2
		1:20 PM	7.83	6.2	-2.9	7.26	1.71	0.203	0.1	7.28
		1:25 PM	7.96	3.6	-4.9	7.24	1.54	0.203	0.1	7.34
		1:30 PM	7.89	3.7	-7.1	7.25	1.38	0.203	0.1	7.41
M134C7	5/16/2019	9:10 AM	14.53	21.9	102.7	6.62	4.18	0.302	0.14	5.54
		9:15 AM	14.68	13.8	-1.4	6.59	1.64	0.295	0.14	5.76
		9:20 AM	14.65	13.5	-14	6.68	0.87	0.287	0.14	5.82
		9:25 AM	14.56	14	-17.4	6.7	0.62	0.287	0.14	5.89
		9:30 AM	14.54	13.5	-19.5	6.7	0.47	0.282	0.13	5.93
		9:35 AM	14.55	13.6	-19.2	6.71	0.46	0.284	0.14	5.97
		9:40 AM	1:26 PM	13.5	-21.3	6.73	0.45	0.282	0.13	6.04
M134C8	8/15/2019	8:35 AM	22.69	22.8	-92	6.94	4.78	0.285	0.13	6.35
		8:40 AM	23.18	8.8	-97.1	6.8	1.44	0.249	0.12	6.58
		8:45 AM	23.74	5.7	-86.7	6.79	0.61	0.25	0.12	6.75
		8:50 AM	24.16	3.6	-92	6.77	0.03	0.254	0.12	6.97
		8:55 AM	24.61	3.4	-92.3	6.75	0.12	0.253	0.12	7.23
		9:00 AM	24.66	2.4	-96.9	6.76	0.09	0.25	0.12	7.3
		9:05 AM	24.8	1.7	-97.9	6.75	0.02	0.249	0.12	7.3
		9:10 AM	25.1	1	-94.3	6.75	0.08	0.25	0.12	7.3
		9:15 AM	25.33	1.3	-90.2	6.75	0.11	0.252	0.12	7.3
		9:20 AM	25.42	0.9	-89.1	6.76	0.12	0.251	0.12	7.3
M134C9	11/8/2019	10:45 AM	15.4	16.8	-113.9	7.19	5.56	0.117	0.06	6.69
		10:50 AM	16.51	10.3	-130.8	6.9	1.34	0.084	0.04	6.93
		10:55 AM	16.5	8.1	-130.9	6.8	0.87	0.082	0.04	7.06
		11:00 AM	16.67	7.4	-137.8	6.77	0.71	0.081	0.04	7.14
		11:05 AM	16.67	7.7	-153.4	6.76	0.62	0.08	0.04	7.19
		11:10 AM	15.96	6.1	-153.5	6.74	0.64	0.08	0.04	7.26
		11:15 AM	17.24	5.4	-164	6.71	0.7	0.079	0.04	7.4
		11:20 AM	17.43	5.4	-156.8	6.72	0.45	0.079	0.04	7.52
		11:25 AM	17.24	4.3	-176	6.72	0.43	0.079	0.04	7.62
		11:30 AM	17.27	10.4	-179	6.72	0.41	0.079	0.04	7.7

Appendix A-3
MW-135 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M135C2	2/22/2018	9:01 AM	11.91	86.5	-108	6.32	10.29	9.0149	4.18	3.76
		9:04 AM	11.99	43.4	-94	6.47	11.67	7.2747	3.34	--
		9:06 AM	11.7	21.3	-80	6.53	11.89	6.5847	3.01	--
		9:08 AM	11.35	15.4	-68	6.57	11.99	6.2358	2.84	--
		9:11 AM	10.99	25	-57	6.62	12.03	5.9994	2.73	--
		9:13 AM	10.63	28.8	-49	6.65	12.1	5.8330	2.64	--
		9:16 AM	10.32	28.8	-42	6.68	12.16	5.7072	2.58	--
		9:18 AM	10.07	19	-37	6.72	12.27	5.4922	2.48	--
		9:20 AM	9.85	13.6	-31	6.74	12.25	5.3853	2.43	--
		9:23 AM	9.66	9.3	-26	6.77	12.28	5.2871	2.38	--
		9:25 AM	9.48	6.2	-21	6.79	12.33	5.2163	2.34	--
		9:28 AM	9.34	7.5	-17	6.81	12.37	5.1406	2.31	--
		9:30 AM	9.22	8.9	-12	6.82	12.36	5.0744	2.27	--
		9:32 AM	9.11	9.7	-7	6.84	12.36	5.0194	2.25	--
		9:35 AM	9.01	10.4	-3	6.85	12.38	4.9785	2.23	--
		9:37 AM	8.92	11.2	2	6.87	12.4	4.9504	2.21	--
		9:40 AM	8.86	12.1	6	6.88	12.39	4.9196	2.20	--
		9:42 AM	8.75	12.9	11	6.89	12.41	4.8954	2.19	--
		9:44 AM	8.59	13.7	15	6.89	12.48	4.8706	2.17	--
		9:47 AM	8.44	14.4	19	6.89	12.52	4.8427	2.16	--
		9:49 AM	8.29	15.2	23	6.9	12.55	4.8249	2.15	6.06
M135C3	5/10/2018	8:29 AM	13.94	91.1	-72.0	6.09	3.60	9.4044	0.53	3.97
		8:32 AM	13.64	96.4	-72.0	5.97	1.47	9.3864	0.53	--
		8:34 AM	13.64	102.4	-69.0	5.97	1.14	9.3792	0.53	--
		8:36 AM	13.61	112.0	-63.0	5.97	1.05	9.3908	0.53	--
		8:39 AM	13.50	145.5	-60.0	5.97	0.97	9.3988	0.53	--
		8:41 AM	13.54	125.5	-56.0	5.98	0.94	9.4093	0.53	--
		8:44 AM	13.61	366.4	-50.0	5.98	0.95	9.4439	0.53	--
		8:46 AM	13.90	131.6	-59.0	5.99	0.99	9.3921	0.53	--
		8:48 AM	14.11	109.6	-59.0	6.00	0.99	9.3911	0.53	--
		8:51 AM	14.32	105.3	-57.0	6.00	0.91	9.3945	0.53	--
		8:53 AM	14.54	103.4	-55.0	6.00	0.92	9.3859	0.53	4.64
M135C4	8/1/2018	1:34 PM	22.77	21.3	-108.0	6.83	2.98	8.8860	0.48	3.53
		1:37 PM	25.62	15.8	-118.0	6.61	1.38	8.5640	0.48	--
		1:40 PM	25.58	14.9	-119.0	6.46	0.74	8.5720	0.48	--
		1:42 PM	25.42	15.6	-120.0	6.39	0.56	8.5890	0.49	--
		1:45 PM	25.52	14.3	-122.0	6.34	0.49	8.6010	0.49	--
		1:47 PM	25.50	18.6	-124.0	6.31	0.44	8.5850	0.49	--
		1:50 PM	25.62	17.2	-125.0	6.29	0.39	8.6060	0.49	--
		1:52 PM	25.76	16.6	-127.0	6.28	0.38	8.5950	0.49	--
		1:55 PM	25.50	18.1	-129.0	6.27	0.37	8.6070	0.49	4.52

Appendix A-3
MW-135 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M135C5	11/21/2018	9:05 AM	13.32	8.9	-43.4	5.64	2.50	3.1720	1.67	3.59
		9:10 AM	13.53	1.0	-60.4	5.69	0.67	3.1950	1.68	4.2
		9:15 AM	13.60	1.0	-63.3	5.71	0.52	3.1930	1.68	4.44
		9:20 AM	13.72	1.0	-64.3	5.72	0.46	3.1940	1.68	4.77
		9:25 AM	13.71	1.1	-65.6	5.72	0.42	3.1950	1.68	5.12
		9:30 AM	13.70	1.1	-65.7	5.72	0.41	3.1930	1.68	5.51
		9:35 AM	13.71	1.1	-65.6	5.72	0.41	3.1940	1.68	5.85
M135C6	2/28/2019	9:10 AM	7.56	106	36.5	7.29	1.43	7.1510	3.93	4.18
		9:15 AM	7.48	97.7	45.9	6.93	1.56	7.072	3.89	4.42
		9:20 AM	7.37	116.1	60.1	6.71	2.02	7.045	3.87	4.85
		9:25 AM	7.24	127.4	69.4	6.51	2.38	7.073	3.89	4.94
		9:30 AM	7.14	131.5	75.8	6.43	2.6	7.072	3.88	5.2
		9:35 AM	7.11	127.9	80.7	6.39	2.63	7.03	3.86	5.41
		9:40 AM	7.04	130.5	83.9	6.38	2.55	6.986	3.83	5.55
		9:45 AM	7.12	150.9	86.6	6.35	2.41	6.947	3.81	5.62
		9:50 AM	7.2	148.1	89.3	6.38	2.2	6.885	3.77	5.7
		9:55 AM	7.28	136.8	91.1	6.38	2.04	6.844	3.75	5.78
M135C7	5/16/2019	12:55 PM	15.31	87.9	90.8	6.42	3.68	4.745	2.55	3.6
		1:00 PM	15.1	86.8	84.4	6.31	1.17	5.061	2.74	3.87
		1:05 PM	15.46	122.9	87.5	6.3	1.02	5.282	2.86	3.96
		1:10 PM	15.1	156.5	90.4	6.32	1.2	5.409	2.94	4.11
		1:15 PM	14.75	145.5	92.1	6.33	1.23	5.443	2.96	4.2
		1:20 PM	14.76	145.7	94.4	6.32	1.23	5.444	3.03	4.32
		1:25 PM	14.77	145.9	96.1	6.3	1.22	5.445	3.08	4.39
M135C8	8/15/2019	8:45 AM	22	17.3	-57.6	6.23	1.72	8.656	4.84	4.12
		8:50 AM	22.48	8.2	-62.7	6.25	0.95	8.466	4.71	4.4
		8:55 AM	22.56	3	-62.6	6.26	0.48	8.299	4.62	4.65
		9:00 AM	22.64	3.3	-63.9	6.27	0.53	8.149	4.53	4.93
		9:05 AM	22.73	4.6	-64.3	6.27	0.4	8.063	4.47	5.1
		9:10 AM	22.75	4.5	-66.3	6.27	0.31	8.034	4.46	5.3
		9:15 AM	22.86	4.1	-66.3	6.27	0.15	7.975	4.42	5.48
		9:20 AM	22.9	3.8	-63.4	6.27	0.08	7.947	4.41	5.77
		9:25 AM	22.81	3.5	-62.3	6.27	0.07	7.946	4.4	6.02
		9:30 AM	22.98	3.8	-61.8	6.27	0.14	7.927	4.4	6.19
M135C9	11/12/2019	11:40 AM	13.6	5.5	-73.9	6.49	1.58	4.147	2.22	4.08
		11:45 AM	14.42	4.6	-76.8	6.37	0.49	4.11	2.19	4.44
		11:50 AM	14.76	4.9	-81.7	6.34	0.42	4.107	2.19	4.84
		11:55 AM	14.6	4.8	-85	6.34	0.39	4.106	2.19	5.24
		12:00 PM	13.86	4.8	-87	6.34	0.38	4.103	2.19	5.61
		12:05 PM	13.74	5.8	-88.7	6.33	0.36	4.103	2.19	5.99
		12:10 PM	14.38	4.9	-90.7	6.33	0.34	4.099	2.19	6.41
		12:15 PM	14.56	5.9	-92	6.33	0.33	4.086	2.19	6.71
		12:20 PM	15.06	4.9	-93.6	6.33	0.33	4.093	2.18	6.95
		12:25 PM	14.99	5.2	-94.8	6.33	0.33	4.086	2.17	7.04

Appendix A-4
 A21TP1 Low Flow Sampling Data
 ISS/ESS Long-Term Monitoring Report
 Former Chevron Perth Amboy Facility
 Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
A21TP1S	2/22/2018	12:28 PM	7.47	133.6	159	6.52	3.61	4.0501	2.12	6.44
		12:31 PM	7.58	73.2	162	6.46	1.6	4.8325	2.56	--
		12:33 PM	7.63	26	167	6.46	1.25	5.2225	2.78	--
		12:36 PM	7.5	60.4	171	6.47	1.12	5.4294	2.90	--
		12:38 PM	7.59	21.1	176	6.47	1.14	5.5222	2.95	--
		12:40 PM	7.72	10.6	180	6.47	1.2	5.5651	2.98	--
		12:43 PM	7.71	15.1	184	6.48	1.24	5.6374	3.02	--
		12:45 PM	7.66	9.9	185	6.48	1.24	5.7731	3.09	--
		12:48 PM	7.74	9.8	190	6.48	1.16	5.7327	3.07	--
		12:50 PM	7.84	7.8	190	6.49	1.05	5.7571	3.09	--
		12:52 PM	7.81	7.1	191	6.49	0.9	5.7953	3.11	--
		12:55 PM	7.76	6.4	193	6.49	0.77	19.4106	11.36	--
		12:57 PM	7.79	6.4	194	6.49	0.67	19.5258	11.44	--
		1:00 PM	7.82	6.9	194	6.5	0.58	19.4366	11.38	--
		1:02 PM	7.72	7.5	196	6.5	0.52	19.5567	11.45	--
		1:04 PM	7.69	7.9	199	6.5	0.47	19.6458	11.51	--
		1:07 PM	7.59	7.1	203	6.5	0.43	19.8507	11.63	--
		1:09 PM	7.6	6.6	207	6.5	0.38	19.8291	11.62	--
		1:12 PM	7.68	7.1	207	6.5	0.35	19.7279	11.56	--
		1:14 PM	7.7	6.7	196	6.5	0.34	19.8017	11.61	--
		1:16 PM	7.74	6.6	195	6.5	0.31	19.8877	11.66	6.45
A21TP1T	5/10/2018	9:03 AM	15.27	9.7	-33.0	6.55	4.68	1.1250	0.06	7.53
		9:06 AM	14.37	6.7	-66.0	6.50	2.54	1.1542	0.06	--
		9:08 AM	13.35	5.6	-72.0	6.49	1.81	1.2452	0.06	--
		9:11 AM	13.12	5.0	-76.0	6.48	1.46	1.3423	0.07	--
		9:14 AM	13.07	4.8	-81.0	6.48	1.33	1.4324	0.07	--
		9:17 AM	13.17	5.0	-86.0	6.47	1.28	1.5301	0.08	--
		9:19 AM	13.25	4.9	-90.0	6.47	1.21	1.5609	0.08	--
		9:22 AM	13.38	5.4	-96.0	6.48	1.14	1.5835	0.08	--
		9:25 AM	13.37	6.4	-101.0	6.48	1.12	1.5787	0.08	--
		9:28 AM	13.68	5.3	-105.0	6.49	1.08	1.6096	0.08	--
		9:30 AM	13.37	5.4	-110.0	6.49	1.06	1.6093	0.08	--
		9:33 AM	13.56	4.8	-115.0	6.49	1.05	1.6317	0.08	--
		9:36 AM	13.89	5.2	-120.0	6.49	1.00	1.6934	0.09	--
		9:38 AM	13.96	5.2	-125.0	6.48	0.97	1.7597	0.09	--
		9:41 AM	13.90	4.3	-129.0	6.48	0.96	1.7569	0.09	--
		9:44 AM	14.20	5.3	-133.0	6.48	0.92	1.7470	0.09	--
		9:47 AM	14.24	4.3	-138.0	6.49	0.97	1.7123	0.09	--
		9:49 AM	14.32	4.3	-142.0	6.50	0.95	1.7134	0.09	--
		9:52 AM	14.49	4.9	-145.0	6.49	0.91	1.7348	0.09	7.67
A21TP1U	8/2/2018	9:33 AM	25.52	21.8	-108.0	7.61	5.87	1.0160	0.05	7.46
		9:36 AM	22.85	17.9	-127.0	7.17	1.77	1.0980	0.60	--
		9:39 AM	23.01	22.5	-133.0	6.93	1.31	1.1410	0.60	--
		9:41 AM	23.19	16.6	-137.0	6.79	1.18	1.1800	0.60	--
		9:44 AM	23.00	20.2	-139.0	6.69	1.11	1.2040	0.06	--
		9:47 AM	22.99	12.6	-141.0	6.63	1.10	1.2310	0.06	--
		9:50 AM	22.62	11.1	-143.0	6.58	1.08	1.2620	0.06	--
		9:52 AM	22.65	11.9	-144.0	6.55	1.04	1.2720	0.06	--
		9:55 AM	22.84	10.5	-145.0	6.53	1.01	1.2930	0.07	--
		9:58 AM	23.20	11.6	-147.0	6.51	0.99	1.3150	0.07	--
		10:01 AM	23.64	9.6	-147.0	6.49	0.98	1.3310	0.07	--
		10:03 AM	23.52	10.1	-149.0	6.49	0.97	1.3440	0.07	--
		10:06 AM	23.43	9.7	-150.0	6.48	0.95	1.3600	0.07	7.48

Appendix A-4
 A21TP1 Low Flow Sampling Data
 ISS/ESS Long-Term Monitoring Report
 Former Chevron Perth Amboy Facility
 Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
A21TP1V	11/28/2018	10:25 AM	11.86	108.5	159.3	6.56	4.62	0.7990	0.39	5.98
		10:30 AM	12.36	62.0	117.3	6.61	3.29	0.8230	0.41	6
		10:35 AM	12.39	54.3	85.3	6.63	3.54	0.8240	0.41	6.04
		10:40 AM	12.54	43.3	70.3	6.60	3.85	0.8210	0.41	6.1
		10:45 AM	12.44	39.6	65.7	6.61	3.89	0.8240	0.41	6.12
		10:50 AM	12.67	31.9	59.5	6.61	3.78	0.8230	0.41	6.16
		10:55 AM	12.63	30.0	58.8	6.61	3.98	0.8240	0.41	6.2
A21TP1W	2/13/2019	1:15 PM	8.42	110.4	-106	10	7.44	0.813	0.39	6.16
		1:20 PM	8.22	48	-94.9	9.04	5.46	0.676	0.33	6.2
		1:25 PM	8.39	27.4	-83.4	8.27	4.76	0.726	0.36	6.24
		1:30 PM	8.42	27.9	-77.6	8.03	4.51	0.744	0.37	6.29
		1:35 PM	8.4	373.9	-66	7.77	4.1	0.787	0.39	6.31
		1:40 PM	8.51	17.9	-58.2	7.61	3.82	0.815	0.4	6.36
		1:45 PM	8.47	50.7	-50.9	7.47	3.54	0.852	0.42	6.4
		1:50 PM	8.36	7.9	-42.1	7.35	3.13	0.913	0.45	6.47
		1:55 PM	8.46	149.2	-40.4	7.32	3.04	0.923	0.46	6.52
		2:00 PM	8.35	176.3	-36.9	7.28	2.91	0.949	0.47	6.57
A21TP1X	5/23/2019	1:20 PM	12.2	47.8	97.4	7.07	2.53	1.044	0.52	6.88
		1:25 PM	12.49	11.2	83.5	6.76	1	1.036	0.52	6.92
		1:30 PM	12.64	6	78.8	6.7	0.66	1.045	0.52	6.95
		1:35 PM	12.66	1.2	75.5	6.67	0.55	1.053	0.53	6.99
		1:40 PM	12.58	2.3	73.6	6.66	0.57	1.062	0.53	7.02
		1:45 PM	12.57	2.2	72.1	6.66	0.56	1.063	0.53	7.04
		1:50 PM	12.56	2.1	70.7	6.67	0.55	1.064	0.54	7.09
A21TP1Y	8/29/2019	9:15 AM	18.22	757.1	-68.7	6.84	2.97	1.359	0.68	8.21
		9:20 AM	17.72	344.2	-50.3	6.5	2.73	1.313	0.66	8.32
		9:25 AM	17.7	280.6	-28.1	6.35	1.98	1.239	0.62	8.38
		9:30 AM	17.4	89.4	-9.1	6.36	2.01	1.238	0.62	8.45
		9:35 AM	17.62	43.1	-2.8	6.38	3.21	1.353	0.68	8.51
		9:40 AM	17.86	28.9	-4.8	6.43	1.39	1.42	0.72	8.54
		9:45 AM	17.8	21.8	-5.3	6.44	1.54	1.47	0.74	8.59
		9:50 AM	17.74	21.5	-5.7	6.46	1.97	1.499	0.76	8.64
		9:55 AM	17.63	22.7	-5.9	6.47	1.6	1.522	0.77	8.65
		10:00 AM	17.72	28.9	-6.5	6.47	1.92	1.512	0.76	8.68
A21TP1Z	11/4/2019	9:25 AM	14.19	21.7	166.9	6.65	3.65	0.472	0.23	7.51
		9:30 AM	15.54	20.3	157	6.54	1.57	0.35	0.17	7.61
		9:35 AM	16.46	20	123.4	6.47	0.83	0.372	0.18	7.64
		9:40 AM	16.7	14.6	97.4	6.46	0.74	0.391	0.19	7.65
		9:45 AM	16.65	10.3	58.6	6.47	0.72	0.429	0.21	7.65
		9:50 AM	16.82	7.1	19.4	6.48	0.72	0.456	0.22	7.69
		9:55 AM	16.78	5.7	15.5	6.48	0.73	0.477	0.23	7.66
		10:00 AM	16.79	4.5	-3.6	6.49	0.69	0.497	0.24	7.66
		10:05 AM	16.81	2.7	-28.7	6.5	0.72	0.518	0.26	7.68
		10:10 AM	16.59	1.8	-44.5	6.52	0.66	0.543	0.26	7.66

Appendix A-5
MW-0035 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M035D8	8/21/2019	10:55	28.19	383.2	-60.7	7.44	1.46	1.007	0.49	5.32
		11:00	27.81	442.2	-86.7	7.3	2.6	0.872	0.43	5.52
		11:05	28.25	383.6	-100.6	7.42	2.75	0.843	0.41	5.54
		11:10	27.91	343.2	-106.4	7.46	2.49	0.838	0.41	5.64
		11:15	27.69	214.5	-110.7	7.54	2.79	0.852	0.42	5.77
		11:20	27.6	135	-118.2	7.67	3.19	0.798	0.39	5.9
		11:25	27.65	636.4	-99.2	7.67	4.32	0.893	0.43	6.02
		11:30	26.67	400.7	-142.6	7.28	2.28	2.441	1.25	6.05
		11:35	26.85	295.1	-154.1	7.36	2.65	2.163	1.1	6.12
		11:40	27.68	257.1	-155.1	7.41	2.81	1.909	0.94	6.21
M035D9	11/8/2019	09:45	13.72	8.8	75.4	7.04	5.85	2.773	1.39	3.2
		09:50	13.17	11.3	44.2	7.16	5.4	2.099	1.05	3.29
		09:55	12.78	9.7	35.3	7.43	8.54	1.65	0.79	3.29
		10:00	13.06	378.8	-58.9	7.3	7.45	2.323	1.21	3.29
		10:05	12.07	35	-23.3	7.79	10.76	1.406	0.7	3.29
		10:10	11.73	9	20.6	8.01	11.39	1.266	0.64	3.3
		10:15	11.57	8.4	32.8	8.07	11.95	1.233	0.62	3.1
		10:20	11.38	7.8	41.5	8.12	12.13	1.206	0.6	3.41
		10:25	11.17	7.8	47	8.14	12.57	1.195	0.6	3.41
		10:30	11	7.7	50.9	8.16	12.71	1.19	0.6	3.4

Appendix A-6
MW-158 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M158D7	8/22/2019	10:00 AM	19.96	246.5	-169.1	6.85	0.93	35.92	22.96	4.45
		10:05 AM	18.5	304.7	-181.7	6.74	0.88	37.34	23.7	4.87
		10:10 AM	18.03	123.6	-177.5	6.74	0.54	35.81	22.56	5.24
		10:15 AM	18.93	29.3	-146.6	6.72	0.26	29.22	17.99	5.41
		10:20 AM	18.98	10.1	-134.4	6.67	0.22	25.92	15.85	5.6
		10:25 AM	18.84	9.7	-131.3	6.65	0.28	24.62	15.02	5.82
		10:30 AM	19.51	2.9	-131.5	6.65	0.26	23.95	14.55	6.01
		10:35 AM	19.99	11.2	-132	6.64	0.21	23.34	14.17	6.18
		10:40 AM	20.17	23.5	-133.1	6.63	0.21	22.67	13.69	6.4
		10:45 AM	20.22	38.8	-134.9	6.62	0.14	21.92	13.19	6.52
M158D9	11/12/2019	8:40 AM	12.35	5.4	38.3	5.67	0.92	12.98	7.5	3.94
		8:45 AM	12.73	3.2	66.4	6.71	0.64	6.658	7.51	4.18
		8:50 AM	12.43	3.9	-93.8	6.74	0.9	13.02	7.52	4.49
		8:55 AM	12.13	6.8	-99.2	6.74	1.36	13.05	7.54	4.78
		9:00 AM	12.74	6.4	-103.8	6.75	1.25	13.05	7.54	4.96
		9:05 AM	13.12	5	-108.8	6.82	0.58	13.15	7.54	5.18
		9:10 AM	13.44	6.9	-109.3	6.75	0.58	13.18	7.63	5.38
		9:15 AM	13.56	5.6	-110.5	6.75	0.37	13.1	7.57	5.58
		9:20 AM	13.51	5.6	-112.4	6.75	0.33	13.09	7.57	5.82
		9:25 AM	13.6	5.3	-113.7	6.76	0.32	13.09	7.58	6.11

Appendix A-7
MW-552 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M552A2	8/21/2019	10:45 AM	22.84	0.8	-146.6	6.6	2.73	18.96	11.31	5.17
		10:50 AM	21.09	60.4	-145.1	6.69	0.74	18.02	10.64	5.77
		10:55 AM	21.1	182.9	-142.7	6.65	0.63	15.85	9.25	6.19
		11:00 AM	21.44	15.5	-139	6.65	0.63	14.15	8.18	6.85
		11:05 AM	21.98	38.7	-138.5	6.65	0.65	13.65	7.9	7.22
		11:10 AM	21.95	43.5	-138.8	6.67	0.75	13.21	7.6	7.7
		11:15 AM	22.02	36.4	-138.9	6.67	0.77	13.8	8.02	8.04
		11:20 AM	21.97	28.4	-141.4	6.69	0.77	13.38	7.7	8.32
		11:25 AM	21.81	17.8	-144.8	6.67	0.78	12.77	7.34	8.42
		11:30 AM	22.01	14.5	-148.1	6.65	0.79	12.35	7.08	8.54
M552A3	11/12/019	8:25 AM	14.37	14.6	-138	7.32	0.82	40.16	25.67	5.26
		8:30 AM	13.8	8.4	-148.2	7.08	0.78	38.26	24.32	5.75
		8:35 AM	13.75	6.9	-148.3	7.02	0.7	36.44	23	6.01
		8:40 AM	13.66	5.9	-148.3	6.98	0.66	35.2	22.15	6.24
		8:45 AM	13.55	5.8	-146.4	6.99	0.64	33.56	21.05	6.49
		8:50 AM	13.47	8.4	-146.5	6.99	0.62	32.72	20.44	6.73
		8:55 AM	13.31	11.7	-145.7	6.98	0.6	31.57	19.62	7.04
		9:00 AM	13.38	20.5	-145	6.97	0.59	29.94	18.55	7.27
		9:05 AM	13.49	26.2	-144.3	6.96	0.59	28.8	17.8	7.6
		9:10 AM	13.52	31.1	-145.6	6.96	0.59	28.1	17.32	7.93

Appendix A-8
MW-562 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M562A2	8/22/2019	1:25 PM	21.38	24.8	-141.7	6.71	0.88	33.16	20.72	6.73
		1:30 PM	21.67	2.8	-126	6.67	0.24	32.37	20.14	6.94
		1:35 PM	22.05	34.7	-123.5	6.61	0.22	32.14	18.38	7.22
		1:40 PM	22.57	76.1	-100.2	6.52	0.21	25.85	15.74	8.3
		1:45 PM	22.79	65.9	-102.2	6.5	0.21	25.64	15.58	8.65
		1:50 PM	23.09	46.3	-114.8	6.45	0.22	25.94	15.84	8.81
		1:55 PM	23.02	43.8	-117.9	6.41	0.23	26.08	15.98	9.13
		2:00 PM	22.89	45	-120.2	6.38	0.22	26.35	16.12	9.29
		2:05 PM	23.04	81.7	-122.8	6.35	0.23	26.88	16.49	9.96
		2:10 PM	22.62	31.1	-123.4	6.31	0.25	27.27	16.78	10.51
M562A3	11/7/2019	1:40 PM	16.58	28	-159.7	6.73	7.11	16.57	9.93	5.6
		1:45 PM	16.8	13.9	-164.1	6.76	0.61	19.09	11.4	5.9
		1:50 PM	17.01	15.7	-157.5	6.75	0.94	19.17	11.42	6.23
		1:55 PM	17.02	26.4	-148	6.72	1.93	18.64	11.08	6.48
		2:00 PM	16.99	37.9	-139	6.67	1.96	17.75	10.51	6.72
		2:05 PM	16.9	73.7	-132.1	6.65	1.94	17.18	10.15	6.91
		2:10 PM	16.85	83.6	-129	6.65	1.88	17.1	10.11	7.15
		2:15 PM	16.81	87.4	-128.2	6.65	1.83	17.06	10.07	7.29
		2:20 PM	16.85	87.5	-128.1	6.65	1.8	17.03	10.06	7.32

Appendix A-9
MW-579 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M579A1	11/12/2019	12:30 PM	14.61	6.8	-59.1	7.34	1.14	18.72	11.12	1.5
		12:35 PM	14.76	7.8	-89	7.16	0.87	17.52	10.35	2.15
		12:40 PM	14.29	9.9	-101.1	7.08	0.78	16.39	9.56	2.19
		12:45 PM	14.13	12.3	-107.6	7.04	0.75	15.32	8.94	2.43
		12:50 PM	14.4	16.3	-111.6	7.01	0.73	14.18	8.23	2.6
		12:55 PM	14.64	21.6	-112.8	6.98	0.66	12.45	7.13	2.88
		1:00 PM	14.52	19.5	-114.8	6.95	0.62	10.95	6.24	2.97
		1:05 PM	14.39	16.6	-114.6	6.94	0.6	9.571	5.4	3.21
		1:10 PM	14.36	14.9	-114.7	6.93	0.6	9.39	5.29	3.44
		1:15 PM	14.39	10.6	-114.5	6.9	0.57	9.141	5.15	3.65

Appendix A-10
MW-580 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M580A1	11/12/2019	8:35 AM	14.93	1232.5	-167.3	6.91	0.44	17.35	10.08	2.9
		8:40 AM	14.88	31.1	-166.5	6.93	0.41	15.41	8.92	3.09
		8:45 AM	14.74	40.3	-167	6.92	0.4	13.8	7.94	3.1
		8:50 AM	14.6	41.4	-167.4	6.93	0.39	14.64	7.62	3.1
		8:55 AM	14.56	42.9	-167.2	6.93	0.38	12.88	7.39	3.1
		9:00 AM	14.44	36.1	-164.3	6.92	0.35	11.35	6.49	3.1
		9:05 AM	14.58	23.9	-160.7	6.93	0.74	10.84	6.17	3.1
		9:10 AM	14.59	19.8	-156.3	6.92	0.7	10.71	6.09	3.1
		9:15 AM	14.2	18.9	-156.8	6.94	0.51	11.16	6.37	3.1
		9:20 AM	14.44	14.1	-157.4	6.93	0.47	10.43	5.93	3.1

Appendix A-11
MW-581 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M581A1	11/8/2019	12:45	16.24	20.1	-354.9	6.31	-7.93	5.449	2.96	1.1
		12:50	16.11	19.8	-352.9	6.24	-5.05	5.082	2.72	1.65
		12:55	15.93	16	-358	6.15	-4.52	4.707	2.51	1.68
		13:00	15.99	23.2	-421.3	6.06	-2.49	3.896	2.07	1.85
		13:05	16.1	22.2	-453	6.12	-1.66	3.754	1.99	1.94
		13:10	15.81	18.4	-462.6	6.16	-1.15	3.613	1.91	2.03
		13:15	15.77	15.1	-460.9	6.18	-1.09	2.517	1.86	2.05
		13:20	15.84	10.4	-456.5	6.21	-0.76	3.337	1.76	2.1
		13:25	15.85	8.2	-449.7	6.23	-0.57	3.155	1.55	2.1
		13:30	16.18	6.3	-443.7	6.25	-0.51	2.95	1.54	2.13

Appendix A-12
MW-582 Low Flow Sampling Data
ISS/ESS Long-Term Monitoring Report
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey

Field Sample ID	Sample Date	Sample Time	Temperature (°C)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)	Conductivity (µS/cm)	Salinity (ppt)	DTW (ft)
M582A1	11/12/2019	12:35 PM	14.93	2.9	-348.1	6.7	-0.39	15.17	8.83	0.5
		12:40 PM	15.29	1.6	-342.9	6.69	-0.75	14.13	8.13	1.15
		12:45 PM	15.33	1	-341.8	6.68	-1.11	12.9	7.27	1.19
		12:50 PM	14.94	1.1	-356	6.79	-1.2	4.388	2.29	1.3
		12:55 PM	14.55	2.1	-355.5	6.91	-0.54	14.56	1.32	1.36
		1:00 PM	14.46	1	-359.9	6.95	-0.17	2.326	1.2	1.44
		1:05 PM	14.47	1	-360.5	6.96	-0.09	2.219	1.14	1.48
		1:10 PM	14.49	1	-361.6	6.99	-0.03	2.066	1.06	1.53
		1:15 PM	14.41	1	-365.5	7.03	0.02	1.876	0.96	1.58
		1:20 PM	14.44	1	-367.8	7.05	0.05	1.863	0.95	1.6

APPENDIX B

Laboratory Analytical Data Packages

(on CD)